



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/772,034	02/03/2004	Michael J. Miller	47254.5700	3874

7590 05/01/2007
SNELL & WILMER L.L.P.
One Arizona Center
400 East Van Buren
Phoenix, AZ 85004-2202

EXAMINER

BAKER, STEPHEN M

ART UNIT	PAPER NUMBER
----------	--------------

2112

MAIL DATE	DELIVERY MODE
-----------	---------------

05/01/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/772,034	MILLER ET AL.
Examiner	Art Unit	
Stephen M. Baker	2112	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 08 February 2007.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-177 is/are pending in the application.
4a) Of the above claim(s) 1-37,48-57,68-125,135-143 and 152-177 is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 38-47,58-67,126-134 and 144-151 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 03 February 2004 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) Notice of Informal Patent Application
6) Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because:

In Fig. 6b, "dynamic forward error correction encoder" (751) apparently should be called a "dynamic forward error correction code/preamble encoder" or the like, and "dynamic forward error correction decoder" (765) apparently should be "dynamic forward error correction code/preamble decoder" or the like.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The abstract of the disclosure is objected to because a technical disclosure of the improvement is lacking. Correction is required. See MPEP § 608.01(b).

3. The disclosure is objected to because of the following informalities:

The "dynamic forward error correction encoder" (751) apparently should be called a "dynamic forward error correction code/preamble encoder" or the like, and "dynamic forward error correction decoder" (765) apparently should be "dynamic forward error correction code/preamble decoder" or the like.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. Claims 38-47, 58-67, 126-134 and 144-151 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 38 and 58: in part B, "data transfer mechanism" is apparently idiosyncratic terminology and apparently should be "data transfer link" or the like.

In claim 38, part D, "encoder" apparently should be "encoding means" or the like, as an ECC code "encoder" *per se* cannot generate a preamble. In the ECC art, the term "encoder" is customarily used to refer to a device that generates only ECC codewords.

In claim 40: "said dynamic forward error correction encoder generates a forward error correction field which size is based on a preamble" is poorly worded and apparently should be "said dynamic forward error correction encoding means generates a forward error correction field which size is indicated in an accompanying preamble" or the like.

In claims 42 and 44-46: "said dynamic forward error correction encoder generates a preamble" apparently should be "said dynamic forward error correction encoding means includes means for generating a preamble" or the like, as an ECC "encoder," as the term is customarily used, generates only codewords of the ECC.

In claim 60: "decoder decodes a forward error correction mechanism's size is based on a preamble" is poorly worded and apparently should be "decoder determines a forward error correction field size based on a preamble" or the like.

In claim 61: "decoder decodes said one or more segment's length based on a preamble" is poorly worded and apparently should be "decoder determines said one or more segment's length based on a preamble" or the like.

In claim 65: "decoder decodes a preamble" apparently should be "decoder decodes based on a preamble" or the like.

In claim 66: "using" is apparently needless and should be deleted.

In claim 67: "decoder detects a preamble" apparently should be "decoder is responsive to a preamble" else the decoder of claims 60-67 should be renamed a "decoding means" or the like.

In claim 126: in part A, "forward error correction mechanism" is apparently idiosyncratic terminology and apparently should be "forward error correction method" or the like; in part C, "which indicates" (second occurrence) should be deleted.

In claim 128: "mechanism" apparently should be "method" or the like.

In claim 129: "said preamble that is 40 bits" should be "a preamble that is 40 bits" or the like.

In claims 130, 133 and 134: "mechanism" (both occurrences) apparently should be "method" or the like; "comprises selecting said" apparently should be "comprises selecting a" or the like.

In claim 131: "comprises selecting said" apparently should be "comprises selecting a" or the like.

In claim 132: "mechanism further comprises selecting forward error correction on said segment data length" is poorly worded and apparently should be "method further comprises selecting a forward error correction method based on said segment data length" or the like.

In claim 144, part B: "mechanism" apparently should be "code used" or the like.

In claim 145: "wherein receiving said segment data further comprises receiving said segment data on said network further comprising a network selected from" is poorly worded and apparently should be "wherein said network is selected from" or the like.

In claim 146: "mechanism" apparently should be "code used" or the like; "mechanism's" apparently should be "code's" or the like.

In claims 147, 149 and 151: "mechanism" apparently should be "code used" or the like.

In claim 148: "wherein determining said forward error correction mechanism further comprises correcting errors" is poorly worded and apparently should be "further comprising correcting errors" or the like.

In claim 150: "mechanism using" apparently should be "code that is" or the like.

Similar observations apply to corresponding portions of the specification.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 38-42, 44-47, 58-65, 67, 126-129, 144-149 and 151 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,856,988 to Kiriyama (hereafter "Kiriyama").

Kiriyama discloses arrangements for selectively FEC encoding and decoding ATM cells with either a cell-loss error correction code (where the codeword spans several cells), a cell-bit error correction code (where the codeword is in one cell), or no error correction code at all, thereby providing a "dynamic forward error correction encoder which generates ... one or more data segments" wherein each "segment" is an ATM cell. Kiriyama's ATM network is a "time division multiplexed data transfer" network

that carries cells in "time slots" and comprises a "plurality of network nodes" including a "sending network node."

Regarding claims 40, 45, 60, 61, 67, 131, 132, 146, 147 and 151, Kiriyama's FEC selection is indicated by a "preamble" (HF, HE) preceding the encoded data and following a header, which effectively indicates the size of the FEC codeword.

Regarding claims 41, 62, 128 and 148, Kiriyama suggests Reed-Solomon FEC.

Regarding claim 42, 65, 129 and 149, ATM cell headers in the FEC-encoded stream serve as 40-bit preambles.

Regarding claims 46, 47, 133 and 134, a cell-loss "network condition," which is affected by CRC errors, and a bit error rate, which is detectable as "forward error correction errors," are used in Kiriyama's system to determine the type of FEC selected (column 4, lines 22-24).

7. Claims 38, 39, 41, 58, 59 and 62-64 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,699,369 to Guha (hereafter "Guha").

Guha discloses arrangements for FEC encoding and decoding ATM cells with selected cell-loss error correction codes (where the codeword spans several cells), or no error correction code at all, thereby providing a "dynamic forward error correction encoder which generates ... one or more data segments" wherein each "segment" is an ATM cell. Guha's ATM network is a "time division multiplexed data transfer" network that carries cells in "time slots" and comprises a "plurality of network nodes" including a "sending network node." Regarding claims 41 and 62, Guha suggests Reed-Solomon FEC.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 40, 42-47, 60, 61, 65-67, 126-134 and 144-151 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,699,369 to Guha (hereafter "Guha").

Regarding claims 43 and 66, Guha does not specify a rate 5/16 code. Guha does, however mention designing the code based on the length of cell-loss burst and mentions using a (7,3) Reed-Solomon code, which is a rate 3/7 code. Official Notice is given that creating a (16, 5) Reed-Solomon code is within the ordinary skill-level in the art. It would have been obvious to a person having ordinary skill in the art to select a rate 5/16 FEC for use in Guha's system, such a selection would have been obvious because Guha teaches designing the code based on the length of cell-loss burst and because creating a (16, 5) Reed-Solomon code is within the ordinary level of skill in the art.

Regarding claims 40, 45, 60, 61, 67, 131, 132, 146, 147 and 151, Guha does not disclose using a preamble for indicating the selected. Official Notice is taken that using a header (which is a form of "preamble") to indicate the FEC code selected in an adaptive FEC scheme was already well-known and conventional at the time the

invention was made. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to implement Guha's FEC-selection indications by means of preambles. Such an implementation would have been obvious because using a preamble to indicate the FEC code selected in an adaptive FEC scheme was already well-known and conventional.

Regarding claims 41, 62, 128 and 148, Guha suggests Reed-Solomon FEC.

Regarding claim 42, 65, 129 and 149, ATM cell headers in the FEC-encoded stream serve as 40-bit preambles.

Regarding claims 46, 47, 133 and 134, a cell-loss "network condition," which is affected by CRC errors, is used in Guha's system to determine the type of FEC selected.

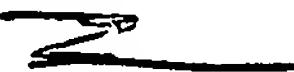
Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. Baker whose telephone number is (571) 272-3814. The examiner can normally be reached on Monday-Friday (11:00 AM - 7:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jacques H. Louis-Jacques can be reached on (571) 272-6962. The fax

phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Stephen M. Baker
Primary Examiner
Art Unit 2112

smb